

Appendix A to the Engineering Analysis
 Virginia City Hybrid Energy Center
 Case-by-case MACT Determination

Unit/Pollutant	Emission Rate Unit	Dominion's Proposal	Hugh L Spurlock (KY) 2007	NE Utilities (NH) 2006	Western Greenbrier Cogeneration (WV) 2006	Thoroughbred Generating Co. (KY) 2006	MidAmerican Energy (IA) 2003
Status			Operating	Operating	Permitted Only	Permitted Only	Operating
Type Boiler		CFB	CFB	CFB	CFB	PC	PC
Rated Capacity	MMBtu/hr	3132	2800	635	1070	7443	7675
Approved Fuels		Coal, Waste Coal & Wood	Coal & TDF	Coal & Wood	Coal and Waste Coal	Coal	Coal
Proposed Controls		Fabric Filter baghouse, Lime injection, SNCR, ACI, FGD, GCP	Fabric Filter baghouse, limestone injection, add-on lime scrubbing, SNCR	SNCR, Limestone injection, fabric filter baghouse	SNCR, Flash Dryer Absorber, Fabric filter Baghouse	SCR, ESP, FGD and Wet ESP	Fabric Filter Baghouse, Low NOx burners, Overfire air, SCR, ACI, FGD
PM (filterable)	lb/MMBtu	0.010	0.009	0.025	0.015	0.018	0.018
		3-hour average	30 day rolling average	30 day rolling average	30 day rolling average	3-hour average	3-hour average
PM10 (filterable & condensables)	lb/MMBtu	0.012	0.012	0.01	0.03	0.018	0.018 (Total Select Metals)
		3-hour average	3-hour average	24-hour average	30 day rolling	3-hour average	3-hour average

Unit/Pollutant	Emission Rate Unit	Dominion's Proposal	Hugh L Spurlock (KY) 2007	NE Utilities (NH) 2006	Western Greenbrier Cogeneration (WV) 2006	Thoroughbred Generating Co. (KY) 2006	MidAmerican Energy (IA) 2003
					average		
PM2.5 (filterable & condensables)	lb/MMBtu	0.012	None	None	None	None	None
		3-hour average	-	-	-	-	-
Opacity		10%	20%	10%	20%	20%	5%
CO	lb/MMBtu	0.15	0.10	0.10	0.20	0.10	0.154
		30 day rolling average	30 day rolling average	24-hour average	24-hour average	30 day rolling average	24-hour average
VOC	lb/MMBtu	0.005	0.0036	0.005	None	0.0072	0.0036
		3-hour average	30 day rolling average	24-hour average	-	30 day rolling average	3-hour average
HF	lb/MMBtu	0.00047	0.00047	None	0.16 lb/ton	0.000159	0.0009
		3-hour average	3-hour average	-	Based on test method	30 day rolling average	3-hour average
HCL	lb/MMBtu	0.0066	0.0035	0.02	0.01 lb/ton	No short term limit	0.0029
		3-hour average	3-hour average	3-hour average	Based on test method	-	3-hour average
HG	lb/MMBtu	0.0000013	0.00000265	0.000003	-	-	0.0000017
		(equivalent for comparison)	Quarterly basis				3-hour average
	lb/MWhr	0.000014	0.000019		0.000021	0.000021	0.0000165
					Coal		
					0.0000014		
					Waste coal		
	lb/yr	49.54	50	16.68		280	114

Unit/Pollutant	Emission Rate Unit	Dominion's Proposal	Mercer Generating Station (NJ) 2008	Comanche Generating Station (CO) 2005	Santee Cooper (SC) 2003	Longleaf Energy Associates. (GA) 2007	Prairie State (MO) 2005
Status			Permitted Only	Permitted Only	Permitted Only	Under Construction	Under Construction
Type Boiler		CFB	Wet Bottom	Supercritical PC	CFB	PC	PC
Rated Capacity	MMBtu/hr	3132	3350	7421	5700	600 MW	7450
Approved Fuels		Coal, Waste Coal & Wood	Coal & natural gas	Sub-bituminous	Coal and Pet Coke	PRB & CAPP Coal	Raw Illinois #6 mine mouth Coal
Proposed Controls		Fabric Filter baghouse, Lime injection, SNCR, ACI, FGD, GCP	Fabric Filter baghouse, FGD, SCR, ACI	SCR, Limestone injection, fabric filter baghouse, sorbent injection	SCR, FGD, ESP	SCR, Dry Scrubber, Fabric Filter Baghouse	SCR, ESP, WFD, Wet ESP,
PM (filterable)	lb/MMBtu	0.010	90	0.0130	0.015		0.015
		3-hour average	Lb/hr		30 day rolling average		3-hour average (Filterable only)
PM10 (filterable & condensables)	lb/MMBtu	0.012	PM10 limits to be determined based on 8 quarterly stack tests (2009 & 2010)	0.0120	0.018	0.012 (filterable only) 0.030 (total particulate)	0.035
		3-hour average		3-hour average	30 day rolling	3-hour average	3-hour average

Unit/Pollutant	Emission Rate Unit	Dominion's Proposal	Mercer Generating Station (NJ) 2008	Comanche Generating Station (CO) 2005	Santee Cooper (SC) 2003	Longleaf Energy Associates. (GA) 2007	Prairie State (MO) 2005
					average		(Filterable & condensable)
PM2.5 (filterable & condensables)	lb/MMBtu	0.012	None	None	None	None	None
		3-hour average	-	-	-	-	-
Opacity		10%	20%	10%	20%	20%	20%
CO	lb/MMBtu	0.15	356	0.13	0.17	0.15	0.12
		30 day rolling average	lb/hr	8 hr rolling average	24-hour average	30 day rolling average	24-hour average
VOC	lb/MMBtu	0.005	153	0.0035	0.06 lb/ton coal	0.0036	0.004
		3-hour average	lb/yr	3-hour average	-	3 hr average	3-hour average
HF	lb/MMBtu	0.00047	240	0.00049	0.0075 lb/ton coal 0.00095 (PRB) 0.0014 (CAPP)	0.00095 (PRB) 0.0014 (CAPP)	0.00026
		3-hour average	Lb/hr	3-hour average		3 hr average	3-hour average
HCL	lb/MMBtu	0.0066	400	None	0.06 lb/ton coal (total acid gases)	0.0013 (PRB) 0.0083 (CAPP)	0.0032
		3-hour average	Lb/hr			3-hour average	3-hour average
HG	lb/MMBtu	0.0000013	0.34		0.000083 lb/ton coal	-	95% control or add ACI
		(equivalent for comparison)	lb/hr				
	lb/MWhr	0.000014		0.000078		0.000015 (PRB) 0.000006 (CAPP)	

Unit/Pollutant	Emission Rate Unit	Dominion's Proposal	Mercer Generating Station (NJ) 2008	Comanche Generating Station (CO) 2005	Santee Cooper (SC) 2003	Longleaf Energy Associates. (GA) 2007	Prairie State (MO) 2005
	lb/yr	49.54	2978.4	512.46	160	280	-

(Facilities reviewed after permit was proposed)

Unit/Pollutant	Emission Rate Unit	Dominion's Proposal	JEA Northside (FL) 1999	Reliant Seward (PA) 2001	Robinson (PA) 2005		
Status			Operating	Operating	Permitted Only		
Type Boiler		CFB	CFB	CFB	CFB		
Rated Capacity	MMBtu/hr	3132	2352	2532	5700		
Approved Fuels		Coal, Waste Coal & Wood	Coal	Coal, Waste Coal	Coal and Waste Coal		
Proposed Controls		Fabric Filter baghouse, Lime injection, SNCR, ACI, FGD, GCP	SDA/FF, CFBS or CFBS/FF	SNCR, Fabric Filter Baghouse, Flash dry absorber	Lime injection with a polishing spray dryer, SNCR, Fabric Filter Baghouse		
PM (filterable)	lb/MMBtu	0.010	0.011				
		3-hour average	3-hour average				
PM10 (filterable & condensables)	lb/MMBtu	0.012	0.011	0.01	0.012		
		3-hour average	3-hour average	30 day rolling average	30 day rolling average		
PM2.5 (filterable & condensables)	lb/MMBtu	0.012	None	None	None		
		3-hour average	-	-	-		
Opacity		10%	20%	10%	10%		
CO	lb/MMBtu	0.15	350	0.15	0.15		

Unit/Pollutant	Emission Rate Unit	Dominion's Proposal	JEA Northside (FL) 1999	Reliant Seward (PA) 2001	Robinson (PA) 2005		
		30 day rolling average	lb/hr	30 day rolling average	30 day rolling average		
VOC	lb/MMBtu	0.005	14 lb/hr	0.005	0.006 coal		
		3-hour average	3-hour average	30 day rolling average	30 day rolling average		
HF	lb/MMBtu	0.00047	0.43	None	0.00254		
		3-hour average	Lb/hr (3 hr average)		30 day rolling average		
HCL	lb/MMBtu	0.0066	None	None	0.00290		
		3-hour average			30 day rolling average		
HG	lb/MMBtu	0.0000013	0.0000105	None			
		(equivalent for comparison)	0.03 lb/hr				
	lb/MWhr	0.000014			0.0000014		
	lb/yr	49.54	262	-	5.31		